

Pecan Production: Establishing an Orchard

Traditionally, Mississippi pecan growers planted trees 50 feet by 50 feet, 60 feet by 60 feet, 80 feet by 80 feet, and even 100 feet by 100 feet. Often 10 to 15 years passed before crops set well and the grower saw any profits. With today's land prices, no one can afford to devote an acre to only 4 to 6 trees as the old 80 by 80 and 100 by 100 plantings allowed.

Alternative spacing concepts are being used throughout the Southeast pecan-growing belt. These higher-density schemes establish more trees per acre, resulting in more production at an earlier orchard age.

How productive is a higher-density planting? Compare production per acre for various tree spacings. **Table 1** shows a theoretical production per tree at various spacings and indicates the number of trees per acre.

Using the data in **Table 1**, you can calculate the pounds of pecans produced per acre for each of the spacing schemes. **Table 2** shows a much greater production per acre for higher-density plantings. Neighboring states report results that approach the theoretical figures in this table for the early years of tree production.

These figures point to a major opportunity for pecan growers and researchers. There is little doubt this theoretical production can be obtained or even surpassed.

Higher-Density Plantings and Varieties

When establishing a higher-density planting, realize it will be necessary to thin or remove trees in 20 to 25 years. However, during this time, you will make extra profits. If you plant an orchard 30 feet by 30 feet, in future years you may reduce it to 30 feet within the rows and 60 feet between rows. Its final proportions will be 90 feet by 90 feet.

Some pecan varieties can be maintained at 30 feet by 30 feet. Such varieties must have early bearing characteristics and should bear nuts on internal branches instead of terminal branches.

Table 1. Number of trees and production potential per tree for various tree spacings.

Spacing	Trees/Acre	Production of Tree at Age				
		4	5	6	7	8-10
30 × 30	48.4	10 lb	20 lb	25 lbs	30 lb	40 lb
40 × 40	27.2	10 lb	20 lb	25 lbs	30 lb	40 lb
80 × 80	6.8	10 lb	20 lb	25 lbs	30 lb	40 lb
100 × 100	4.4	10 lb	20 lb	25 lbs	30 lb	40 lb

Table 2. Production: pounds per acre at various spacings and tree ages.

Spacing	4th year	5th year	6th year	7th year	8-10th year
30 × 30	484	968	1,210	1,452	1,936
40 × 40	272	544	680	819	1,088
80 × 80	68	136	170	204	272
100 × 100	44	88	110	132	176

You can prune trees with these fruiting habits to confine them to their original spacing; such trees include Cape Fear, Sumner, and Choctaw. Other trees meet these requirements and have been released as varieties.

Varieties such as Stuart, Schley, Candy, Owens, Desirable, Barton, Elliott, Forkert, and Jackson do not have the characteristics to be maintained permanently at close space plantings. Trees that are susceptible to pecan scab disease should not be used in this type of spacing. However, they could be productive at 30 feet by 30 feet or 40 feet by 40 feet spacings in their early bearing years before crowding begins.

Establishing the Orchard

You can establish a pecan planting in a few different ways:

- ▶ Transplant bareroot, grafted trees of a desired variety.
- ▶ Transplant potted, grafted trees of a desired variety.
- ▶ Transplant rootstock trees that will be grafted later.
- ▶ Plant pecans directly into the soil and either graft or bud later.

It is often better to buy trees from a nursery than to attempt to grow your own. Trees with 1-year-old tops are recommended since they withstand transplanting better than older trees, they require less care, and they are more economical. Trees of 4–5 feet and 5–6 feet are the best to plant, but 3- to 4-foot trees are satisfactory. Plant trees in December, January, or February. Prune tree tops back by one-third to one-half at planting, and trim the taproot back to 18 inches long.

One advantage of transplanting trees is they come into bearing sooner than seedlings. Another advantage is that nursery trees usually are already grafted, and you will not need to do this job later.

A major disadvantage is the cost of the trees, especially the grafted ones. As a grower, you must decide which method you prefer to establish your orchard. The decision is determined by the acreage to be planted, the production speed desired, and other factors.

To ensure you get the desired variety and number of trees, order your trees as early as possible in the prior year and specify a delivery date. Immediately upon delivery, examine the trees. If the roots are dried out, reject the delivery and notify the nursery at once.

You should plant trees immediately upon delivery, but if you must delay planting, heel-in the trees by digging a shallow trench, unwrapping the trees, and covering the roots with moist soil or sawdust. Under no circumstances should the roots be allowed to dry.

Direct Seeding of Nuts

Several Mississippi orchards have been established by direct seeding of nuts. When trees of desired varieties are not available from nurseries, direct seeding will establish trees that may be budded later.

Many growers are planting large, well-filled nuts in a planned spacing scheme. They will later bud these seedlings when graft or budwood of these desirable varieties becomes available. Budded trees in the Delta have come into bearing at about the same time as 1-year-old trees transplanted from the nursery. Establishing an orchard by direct seeding costs considerably less than nursery trees.

If you decide to establish a pecan orchard by direct seeding, select large, well-filled nuts for planting. Nuts harvested in the fall may be used to start a nut planting the following spring.

If pecans are to be stored in winter before planting the following spring, place the nuts in layers 3 inches deep between moist sand or peat moss to keep them cool and prevent germination. Keeping the pecan shell moist before planting results in faster germination.

In the early spring, plant three to five nuts per hill. Place the pecan nuts about 2–3 inches deep in the soil. Place a stake or a wire screen around each hill so you can identify the small plants.

If more than one of the seeds germinates and grows in each hill, select the best tree. Cut all the others below the ground. Bud or graft the seeding trees to the desired variety.

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